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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,561	11/24/2003	Myoung-Kee Baek	041993-5344	1881
9629	7590	03/10/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			EVANISKO, LESLIE J	
			ART UNIT	PAPER NUMBER
			2854	

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/718,561	Applicant(s) BAEK ET AL.	
	Examiner Leslie J. Evanisko	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11-24-2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: resist pattern 106 described in paragraph [0034] on page 12 has not been shown in the Figures.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the etching object layer on the substrate as recited in claims 1, 6-9, and 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because of the following informalities:
Reference numeral 300 in Figure 4D has not been described in the specification. It appears that the term "stage 140" that occurs in paragraph [0033] should be --stage 300--. Additionally, it appears that the term 140 in Figure 4E should actually be --130-- since it appears to be designating the substrate as described in paragraph [0033] and shown in Figure 4D.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

On page 9 in paragraph [0027], the term 105n should be deleted and replaced with --105b-- to correct an obvious typographical error since there is no 105n in the drawing figures.

Additionally, it is noted that the specification describes the surface of the cliché being flattened in paragraphs [0011], [0029], and [0037]. However, it is also noted that paragraph [0008] that applicant describes the resist material as being flattened. It appears to the Examiner that the resist material being flattened by the doctor blade is the more accurate description since the cliché itself does not appear to be flattened. Therefore, it is suggested that the language in paragraphs [0011], [0029], and [0037] be amended to more accurately reflect that the resist material is being flattened.

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification does not support the recitation in claim 9 that the etching object layer is an organic layer. It is noted that paragraph [0035] of the specification provides support for the layer being either metal or SiO_x or SiN_x.

Appropriate correction and/or clarification is required.

Claim Objections

7. Claims 2-4, 6, 10, 11, and 12 are objected to because of the following informalities:

With respect to claims 2-4, the term “the substrate” in line 2 is unclear as to whether applicant is referring to the cliché substrate or the substrate being printed upon that was previously recited in claim 1.

With respect to claim 6, the phrase “contacting the substrate where an etching object layer is formed onto the cliché “ is somewhat awkward and misleading since it makes it unclear whether the etching object layer is part of the substrate or part of the cliché. Since it appears from the specification and claim 1 that the etching object layer is part of and formed on the substrate, it is suggested that claim 6 be amended to use language similar to the following: --contacting the etching object layer on the substrate with the cliché-- or similar language. Note a similar change should be made to the similar language appearing in claim 12.

With respect to claims 10, 11 and 12, note that each claim contains language reciting the surface of the cliché is flattened using a doctor blade. However, as noted in the above objection to the specification, this language is somewhat inaccurate since the resist material is actually be flattened by the doctor blade and not the cliché itself.

In claim 11, it is suggested that the term "a second groove structure" in lines 5-6 be deleted and replaced with --the second groove structure-- since the groove structures were previously recited in lines 4.

With respect to claim 12, it is noted that applicant recites "forming a buffer layer on a substrate by depositing one of an organic material and a metal material". However, the specification refers to the buffer layer as being part of the cliché and not the substrate and additionally the substrate is formed with an etching object layer. Therefore, it is not clear whether applicant is intending to recite the buffer layer on the cliché or the etching object layer of the substrate in the lines 2-3 of the claim. In an effort to advance prosecution, the Examiner has assumed that applicant is intending to recite forming a buffer layer on the cliché (and not the substrate to be printed) and then patterning the buffer layer to provide the grooves in the cliché.

Appropriate correction and/or clarification is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 5, 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagae et al. (EP 0 471 628 A1). Nagae et al. teach a method for forming a pattern of a LCD device comprising providing a cliché having at least a first groove with a first width and a second groove with a second width equal to at least a multiple of the first width and an interval, filling a resist material into the first and second groove structures of the cliché and applying the resist material onto an etching object layer of a substrate. See Figure 1(a)-(e) and column 4 in particular. Note Figures 1(a)-(e) of Nagae clearly show the grooves are different widths and the larger sized groove can broadly be considered to be a multiple of the width one of the smaller grooves plus some “interval” as broadly recited.

With respect to claims 5 and 11, note Nagae et al. teach applying the resist material onto an etching object layer comprises contacting and rotating a printing roll onto the cliché to transfer the resist material to a surface of the printing roll and contacting the resist material formed on the surface of the printing roll to transfer the material to an etching object layer of the substrate, as shown in Figures 1(b), 1(c), and 1(d) in particular.

With respect to claims 7-9, note Nagae et al. teach an etching object layer comprising metal (Al) or SiOx (SiO₂), which can be considered to be an organic layer as recited.

With respect to claim 10, Nagae et al. teach depositing the resist material along the entire surface of the cliché and contacting a doctor blade onto the

Art Unit: 2854

surface of the cliché to flatten the resist material and fill the resist material into the grooves and remove the resist material that remains on the surface. See column 4, lines 5-26 in particular.

10. Claims 1-2, 4, 6, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayama et al. (US 6,374,733 B1). Hayama et al. teach a method for forming a pattern of a circuit board comprising providing a cliché having at least a first groove with a first width and a second groove with a second width equal to at least a multiple of the first width and an interval, filling a resist material into the first and second groove structures of the cliché and applying the resist material onto an etching object layer of a substrate. Again, note the cliché of Hayama et al. includes grooves of two different widths, as shown in Figures 4(a) and 4(b), and the larger sized grooves can be considered to be a multiple of the smaller size groove plus some “interval” as broadly recited. Additionally, although Hayama et al. does not specifically teach the pattern being of an LCD device, it is noted that this recitation in the claim is an intended use and since the method of Hayama et al. is broadly capable of being used to form a pattern of an LCD device, it broadly meets the claim language.

With respect to claims 2 and 4, note column 9, lines 64-column 10, line 9 in particular.

With respect to claims 6 and 12, note the method of Hayama et al. includes contacting the substrate having the etching object layer with the

cliché, applying heat or pressure to the substrate, and detaching the substrate from the cliché to transfer the resist material filled in the first and second groove structures to the substrate.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagae et al. in view of Kleist (US 5,662,041). Nagae et al. teach the

Art Unit: 2854

method as recited with the possible exception of the cliché being prepared by providing a buffer layer and patterning the buffer layer. In particular, it is noted that Nagae et al. is silent with respect to the particular details of the cliché and how it is prepared. However, providing a printing cliché including a buffer layer made of metal or organic material to be patterned is well known in the art as exemplified by Kleist in column 1, lines 48-62 and column 3, lines 19-37. In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide the cliché of Nagae et al. with a buffer layer to be patterned as taught by Kleist to provide simple manufacturing of a printing cliché for relatively short production runs.

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Handweiler et al. (US 4,019,436), Dultgen (US 2,040,247), and Vested (US 4,023,971) each show a printing cliché having grooves of different widths having obvious similarities to the claimed subject matter. Kwon et al. (US 6,732,643) and Kim et al. (US 6,730,356) each teach a method of patterning an LCD device having obvious similarities to the claimed subject matter.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leslie J. Evanisko** whose telephone

number is **(571) 272-2161**. The examiner can normally be reached on M-Th
7:30 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the
examiner's supervisor, Andrew H. Hirshfeld can be reached on (571) 272-2168.
The fax phone number for the organization where this application or
proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from
the Patent Application Information Retrieval (PAIR) system. Status information
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9197 (toll-free).


Leslie J. Evanisko
Primary Examiner
Art Unit 2854

lje
March 3, 2005